BEFORE THE BOARD OF ENVIRONMENTAL REVIEW
OF THE STATE OF MONTANA

In the matter of the adoption of New Rules I through III, pertaining to standards for SAR and EC and classifications for constructed CBM water holding ponds, and the amendment of ARM 17.30.602 and 17.30.715 pertaining to definitions for water quality standards and nonsignificance criteria	NOTICE OF PUBLIC HEARING ON PROPOSED ADOPTION AND AMENDMENT (WATER QUALITY)

TO: All Concerned Persons

º 1. On _____, 2002 at _____ a.m., the Board of Environmental Review will hold a public hearing in Room 111 of the Metcalf Building, 1520 East Sixth Avenue, Helena, Montana, to consider the proposed adoption and amendment of the above-stated rules.

2. The Board will make reasonable accommodations for persons with disabilities who wish to participate in this public hearing or need an alternative accessible format of this notice. If you require an accommodation, contact the Board no later than 5:00 p.m., _____, 2002, to advise us of the nature of the accommodation that you need. Please contact the Board Secretary at P.O. Box 200901, Helena, Montana, 59620-0901; phone (406) 444-2544; fax (406) 444-4386 or email ber@state.mt.us.

3. The proposed new rules provide as follows:

RULE I NUMERIC STANDARDS FOR ELECTRICAL CONDUCTIVITY (EC) AND SODIUM ADSORPTION RATION (SAR) (1) No person may violate the numeric water quality standards identified below.

(2) Except as provided in (7) and in [New Rule III], the numeric standards for electrical conductivity (EC) and Sodium Adsorption Ratio (SAR) for Rosebud Creek, Tongue River, Powder River, and the Little Powder River watersheds from November 1 through March 31 are as follows:

(a) the numeric water quality standard for EC is 2000 µS/cm (or an alternative value in the range of 1000 to 2500 µS/cm); and

(b) the numeric water quality standard for SAR is the value derived after multiplying 0.0071 times the existing level of EC and then subtracting 2.475 (i.e., SAR = (EC x 0.0071) - 2.475) [or adopt a different equation that quantifies the relationship between EC and SAR limiting values of SAR to a range of 1-10].

(3) Except as provided in (7) and in [New Rule III], the numeric standards for EC and SAR for the Tongue River watershed from April 1 through October 31 are as follows:

(a) For the mainstem of the Tongue River from the confluence with the Yellowstone River upstream to the northern border of the Northern Cheyenne Indian Reservation:

(i) the numeric water quality standard for EC is 1000 µS/cm [or an alternative value in the range of 750-2000 µS/cm]; and

(ii) the numeric water quality standard for SAR is the value derived after multiplying 0.0071 times the existing level of EC and then subtracting 2.475 (i.e., SAR = (EC x 0.0071) - 2.475) [or adopt a different equation that quantifies the relationship between SAR and EC limiting the value of SAR to a range of 2-10].

(b) For the mainstem of the Tongue River from the northern border of the Northern Cheyenne Indian Reservation to the southern border of the Northern Cheyenne Indian Reservation:

(i) the numeric water quality standard for EC is 900 µS/cm (or an alternative value in the range of 690-2000 µS/cm); and

(ii) the numeric water quality standard for SAR is the value derived after multiplying 0.0071 times the existing level of EC and then subtracting 2.475 (i.e., SAR = (EC x 0.0071) - 2.475) [or adopt a different equation that quantifies the relationship between SAR and EC limiting the value of SAR to a range of 2-10].

(c) For the mainstem of the Tongue River from the southern border of the Northern Cheyenne Indian Reservation up to and including the Tongue River Reservoir:

(i) the numeric water quality standard for EC is 700 µS/cm [or an alternative value in the range of 550-2000 µS/cm]; and

(ii) the numeric water quality standard for SAR is the value derived after multiplying 0.0071 times the existing level of EC and then subtracting 2.475 (i.e., SAR = (EC x 0.0071) - 2.475) [or adopt a different equation that quantifies the relationship between SAR and EC limiting the value of SAR to a range of 2-10].

(d) For the mainstem of the Tongue River from the inlet to the Tongue River Reservoir to the most upstream crossing of the Montana-Wyoming Boundary:

(i) the numeric water quality standard for EC is 600 µS/cm [or an alternative value in the range of 530-2000 µS/cm]; and

(ii) the numeric water quality standard for SAR is the value derived after multiplying 0.0071 times the existing level of EC and then subtracting 2.475 (i.e., SAR = (EC x 0.0071) - 2.475) [or adopt a different equation that quantifies the relationship between SAR and EC limiting the value of SAR to a range of 2-10].

(e) For all other tributaries and surface waters in the Tongue River watershed:

(i) the numeric water quality standard for EC is 500 µS/cm [or an alternative value in the range of 350-600 µS/cm]; and

(ii) the numeric water quality standard for SAR is the value derived after multiplying 0.0071 times the existing level of EC and then subtracting 2.475 (i.e., SAR = (EC x 0.0071) - 2.475) [or adopt a different equation that quantifies the relationship between SAR and EC limiting the value of SAR to a range of 2-10].

(4) Except as provided in (7) and in [New Rule III], the numeric standards for EC and SAR for the Rosebud Creek watershed from April 1 through October 31 are as follows:

(a) For the mainstem of Rosebud Creek from the confluence with the Yellowstone River to the headwaters:

(i) the numeric water quality standard for EC is 1000 µS/cm (or an alternative value in the range of 1740-2500 µS/cm); and

(ii) the numeric water quality standard for SAR is the value derived after multiplying 0.0071 times the existing level of EC and then subtracting 2.475 (i.e., SAR = (EC x 0.0071) - 2.475) [or adopt a different equation that quantifies the relationship between SAR and EC limiting the value of SAR to a range of 2-10].

(b) For all other tributaries and surface waters in the Rosebud Creek watershed:

(i) the numeric water quality standard for EC is 500 µS/cm [or an alternative value in the range of 350-600 µS/cm]; and

(ii) the numeric water quality standard for SAR is the value derived after multiplying 0.0071 times the existing level of EC and then subtracting 2.475 (i.e., SAR = (EC x 0.0071) - 2.475) [or adopt a different equation that quantifies the relationship between SAR and EC limiting the value of SAR to a range of 2-10].

(5) Except as provided in (7) and in [New Rule III], the numeric standards for EC and SAR for the Powder River watershed from April 1 through October 31 are as follows:

(a) For the mainstem of the Powder River from the confluence with the Yellowstone River to the Wyoming border except for the Little Powder River watershed:

(i) the numeric water quality standard for EC is 1900 µS/cm (or an alternative value in the range of 1000-2500 µS/cm); and

(ii) the numeric water quality standard for SAR is the value derived after multiplying 0.0071 times the existing level of EC and then subtracting 2.475 (i.e., SAR = (EC x 0.0071) - 2.475) [or adopt a different equation that quantifies the relationship between SAR and EC limiting the value of SAR to a range of 2-10].

(b) For all other tributaries and surface waters in the Powder River watershed except for the Little Powder River:

(i) the numeric water quality standard for EC is 500 µS/cm [or an alternative value in the range of 350-600 µS/cm]; and

(ii) the numeric water quality standard for SAR is the value derived after multiplying 0.0071 times the existing level of EC and then subtracting 2.475 (i.e., SAR = (EC x 0.00071) - 2.475) [or adopt a different equation that quantifies the relationship between SAR and EC limiting the value of SAR to a range of 2-10].

(6) Except as provided in (7) and in [New Rule III], the numeric standards for EC and SAR for the Little Powder River watershed from April 1 through October 31 are as follows:

(a) For the mainstem of the Little Powder River from the confluence with the Powder River to its headwaters:

(i) the water quality standard for EC is 1900 µS/cm [or an alternative value in the range of 1000-2500 µS/cm]; and

(ii) the water quality standard for SAR is the value derived after multiplying 0.0071 times the existing level of EC and then subtracting 2.475 (i.e., SAR = (EC x 0.0071) - 2.475) [or adopt a different equation that quantifies the relationship between SAR and EC limiting the value of SAR to a range of 2-10].

(b) For all other tributaries and surface waters in the Little Powder River watershed:

(i) the water quality standard for EC is 500 µS/cm [or an alternative value in the range of 350-600 µS/cm]; and

(ii) the water quality standard for SAR is the value derived after multiplying 0.0071 times the existing level of EC and then subtracting 2.475 (i.e., SAR = (EC x 0.0071) - 2.475) [or adopt an equation that quantifies the relationship between SAR and EC limiting the value of SAR to a range of 2-10].

(7) The maximum level of SAR that is allowed as a standard under this rule will be governed by the following:

(a) When the existing level of EC is less than 350 µS/cm [or an alternative value in the range of 100-500] the numeric water quality standard for SAR is 0.5; or

(b) When the existing level of EC is greater than or equal to 350 µS/cm [or an alternative value in the range of 100-500] and the procedures given in (2) through (6) above for calculating the SAR standard results in a value greater than 5 [or an alternative value between 3 and 10], the SAR standard is 5 [or an alternative value between 3 and 10].

AUTH: 75-5-301, MCA
IMP: 75-5-301, MCA

<u>RULE II WATER-USE CLASSIFICATION AND DESCRIPTIONS FOR PONDS AND RESERVOIRS CONSTRUCTED FOR THE DISPOSAL OF COAL BED METHANE WATER</u> (1) The water-use classification for waters in constructed ponds and reservoirs that hold water produced from coal bed methane development and are not located in drainage systems that reach other state waters is . . . . . .G-1.

AUTH: 75-5-301, MCA
IMP: 75-5-301, MCA

RULE III G-1 CLASSIFICATION STANDARDS (1) Waters classified G-1 are to be maintained suitable for watering wildlife and livestock and secondary contact recreation, and marginally suitable for irrigation and aquatic life not including fish. No person may violate the following specific water quality standards for waters classified G-1:

(a) When the daily maximum water temperature is greater than 60° F the geometric mean number of organisms of the fecal coliform group may not exceed 1000 per 100 ml and no more than ten percent of the samples during any 30-day period may exceed 2000 fecal coliforms per 100ml;

(b) EC shall not exceed 3000 µS/cm [or an alternative value in the range of 2000-5000 µS/cm];

(c) The surface and ground water standards listed in WQB-7 do not apply.

AUTH: 75-5-301, MCA
IMP: 75-5-301, MCA

17.30.602 DEFINITIONS (1) through (8) remain the same.

(9) "Electrical Conductivity (EC)" means the ability of water to conduct an electrical current at 25° C. The electrical conductivity of water represents the amount of total dissolved solids in the water and is expressed as µSiemens/cm or µmhos/cm or equivalent units and is corrected to 25° C.

(9) through (24) remain the same but are renumbered (10) through (25).

(26) "Sodium Adsorption Ratio (SAR)" means a value representing the relative amount of Sodium ions to the combined amount of Calcium and Magnesium ions in water using the following formula, where all concentrations are expressed as milliequivalents per liter; $SAR = [Na]/(([Ca]+[Mg])/2)^{½}$.

(26) through (31) remain the same but are renumbered (27) through (32).

AUTH: 75-5-201, 75-5-301, MCA
IMP: 75-5-301, MCA

17.30.715 CRITERIA FOR DETERMINING NONSIGNIFICANT CHANGES IN WATER QUALITY (1) The following criteria will be used to determine whether certain activities or classes of activities will result in nonsignificant changes in existing water quality due to their low potential to affect human health or the environment. These criteria consider the quantity and strength of the pollutant, the length of time the changes will occur, and the character of the pollutant. Except as provided in (2) ~~of this rule~~, changes in existing surface or ground water quality resulting from the activities that meet all the criteria listed below are nonsignificant, and are not required to undergo review under 75-5-303, MCA:

(a) through (f) remain the same.

(g) changes in the quality of water for electrical conductivity and sodium adsorption ratio and for any parameter

for which there are only narrative water quality standards if the changes will not have a measurable effect on any existing or anticipated use or cause measurable changes in aquatic life or ecological integrity.

AUTH: 75-5-301, 75-5-303, MCA
IMP: 75-5-303, MCA

REASON: Why Numeric Standards are Necessary. The Board is proposing the adoption of New Rule I in order to establish numeric water quality standards for electrical conductivity (EC) and sodium adsorption ration (SAR) for the Tongue River, Rosebud Creek, Powder River, and Little Powder River watersheds. The adoption of numeric standards for these parameters is necessary to ensure that the designated and existing uses of these waters for agricultural purposes will be protected during the development of coal bed methane (CBM) currently being proposed in Montana.

The Bureau of Land Management estimates that, in Montana, more than 20,000 coal bed methane wells may be developed in the Tongue River and Powder River basins. Each of these wells will produce about 2.5-10 gallons of water per minute. Water produced during CBM development may have an EC value of 2,200 µS/cm and a SAR value of 40. These values, especially the SAR values, are well above almost all of the existing in-stream values for EC and SAR that have been recorded in the Tongue River, Rosebud Creek, Powder River and Little Powder River watersheds. In addition, the predicted SAR value of 40 in produced CBM water is well above the value that will adversely impact irrigated agriculture. If the produced water from these wells is discharged to surface waters, then the discharge must occur under a Montana Pollutant Discharge Elimination System (MPDES) permit and in compliance with all water quality laws and state-adopted standards.

At present, the State does not have numeric standards for EC and SAR. As a result, permit limits are based upon the narrative water quality standard that prohibits substances in water in concentrations that are "harmful to human, animal, plant or aquatic life." ARM 17.30.637(1)(d)(emphasis added). Translating the narrative standard into an enforceable permit limit on a case-by-case basis will likely be time-consuming, controversial, and may result in inconsistent or differing permit limits due to various interpretations among the permit writers. The Board is proposing numeric water quality standards in new Rule I to provide a reliable and consistent method of developing MPDES permit limits that will protect the designated agricultural uses of the affected waters. Adopting numeric standards would also alleviate any uncertainty in determining when a violation of the State's water quality standards will occur and provide a specific regulatory basis for protecting state waters from discharges of CBM water originating in Wyoming or on tribal lands.

Not adopting numeric water quality standards for EC and SAR may result in inconsistent application of the narrative

standards and will likely result in administrative and legal challenges of MPDES permits. If numeric standards are not adopted, it is also likely that impacts to beneficial uses will occur from discharges originating in Montana, Wyoming or tribal lands because there will likely be differing interpretations of water chemistry, soils, plant tolerance, and climatic data among these three entities.

Reason for the Proposed Numeric Standards.

The proposed water quality standards for EC and SAR apply to the Tongue River, Rosebud Creek, Powder River and Little Powder River and to the water bodies that are tributary to these rivers. The proposed standards are being established to protect riparian plants and field crops that are irrigated with water from these rivers and streams. The Board believes that standards for EC and SAR are both necessary, because EC and SAR together affect the ability of plants to survive. Specifically, EC is a measure of the amount of dissolved solids ("salts") in water that, at high enough levels, will cause a decrease in plant growth or may cause the destruction of plants. In distinction, SAR is the relative amount of sodium to calcium and magnesium in water. At high enough levels of SAR in irrigation water, the sodium adsorbed by the soil will impair soil structure by decreasing the permeability of the soil and ultimately reducing or eliminating the amount of water available for crops.

Rationale for EC Standards during the Irrigation Season (April 1- Oct 31)

The Board is proposing to adopt numeric standards for EC that are applicable only during the irrigation season when the protection of water quality for agricultural use is a concern. Under New Rule I (3) through (7), the time period between April 1 and October 31 is being proposed for the irrigation season standards, because that is the time that irrigation in the affected area normally occurs.

In order to derive standards for EC during the irrigation season, the Board considered the type of plants being irrigated in the affected area, the sensitivity of those plants to EC, the leaching fractions that are occurring, and an adjustment factor that may be applied due to the dilution effect of precipitation. As a starting point, the irrigation season standards for EC are being established to protect the most saline-sensitive plants that are produced in the affected area, which are field beans. The upper limit of EC that is protective of field beans is a value of 1000 µS/cm in the soil water. In order to ensure that the upper limit of 1000 µS/cm in the soil water is not exceeded, the soil water EC value was converted to an irrigation water standard using leaching fractions and a precipitation adjustment factor, because these are the primary factors that determine the relationship between soil water and irrigation water EC.

As indicated above, the proposed EC standards for the irrigation season vary depending upon the type of irrigation used in the various watersheds and the differing leaching fractions that occur as a result of these irrigation practices. For the Tongue River and Rosebud Creek, a leaching fraction of 15% was used as a basis for the EC standards. This leaching fraction was used because a leaching fraction of 15 % is typical of conventional sprinkler and flood irrigation, which is used in the Tongue River basin and in the lower reaches of Rosebud Creek. In distinction, the Board used a 30% leaching fraction to develop the Powder River and Little Powder River standards, because a leaching fraction of 30 % is typical for flood irrigation in the Powder River Valley. In addition, the proposed EC standards for the irrigation season use an adjustment factor to account for the dilution effect of precipitation on irrigation water.

After applying the adjustment factors and leaching fractions discussed above to the level of EC that is protective of the most saline-sensitive plants during the irrigation season, the Board is proposing a numeric EC standard of 1000 µS/cm for the Tongue River, a standard of 1000 µS/cm for Rosebud Creek, and a standard of 1900 µS/cm for the Powder River and Little Powder River. For the tributaries to these rivers and streams, a standard of 500 µS/cm is being proposed due to the much lower leaching fraction associated with irrigation systems on the tributaries.

Why the Board is Proposing to Adopt Varying EC Values as the Applicable Water Quality Standard for Four Separate Segments of the Tongue River.

The Board is proposing to adopt varying levels of EC as the applicable water quality standard for four separate segments of the mainstem of the Tongue River in order to allocate the assimilative capacity of the river water in terms of EC. As used in this discussion, the phrase "assimilative capacity" means the amount of water in a stream that is "higher" quality than that required by the applicable water quality standard. The "assimilative capacity" of a stream is determined by calculating the difference between the existing in-stream concentration of a parameter and the maximum concentration that could be allowed under the applicable water quality standard.

In Rosebud Creek, the Powder and the Little Powder rivers, there is no assimilative capacity for EC, because the recorded mean value of EC for those waters is already at or above the proposed water quality standards. There is, however, assimilative capacity in the Tongue River. The highest mean EC value recorded in the Tongue River was recorded near Miles City at a value of 751 µS/cm. Using the highest recorded in-stream value of 751 µS/cm and subtracting that value from the proposed EC standard of 1000 µS/cm, the assimilative capacity for EC in the Tongue River is 249 µS/cm. By adopting EC standards that progressively become more

stringent in the upstream segments of the Tongue River, the proposed water quality standards will allocate the assimilative capacity of the river in terms of EC.

The Board is proposing standards that allocate the assimilative capacity of the Tongue River in order to ensure that the CBM resource is fairly divided among all interested persons. In this case, there are four political entities that have a stake in CBM development in the Tongue River basin; Montana, Wyoming, the Northern Cheyenne; and the Crow. Since salinity tends to accumulate in the lower reaches of the Tongue River, the potential exists that the most upstream CBM developer could use up all of the river's assimilative capacity. If the upstream developer were allowed to discharge up to the proposed EC standard of 1000 µS/cm, the upstream developer would thereby preclude downstream developers from discharging untreated CBM water into the Tongue River as a method for developing the resource. Allocation of the assimilative capacity through the adoption of water quality standards will assure that each developer will receive a fair share of the potential development.

The allocations for each Tongue River segment are based upon BLM's reasonably foreseeable development projections of CBM development in the Tongue River watershed. Based upon these predictions, each political entity has been allocated a proportion of the assimilative capacity for EC equal to its proportion of the total number of wells predicted in the drainage. Accordingly, allocations were made as follows: 18% for Wyoming; 4% for the Crow, 6% for the Northern Cheyenne, and 72% for Montana. Each entity's allotted proportion of the assimilative capacity for EC was then used to determine the maximum allowable EC at each gauging station, beginning at the Miles City gage where the applicable water quality standard being proposed for EC is 1000 µS/cm. As a result of this process, the proposed EC standards for the four river segments, as defined by the following gauging stations, are: 530 µS/cm at the State line; 700 µS/cm near Birney; 900 µS/cm at the Brandenburg Bridge, and 1000 µS/cm at Miles City.

Rationale for a Maximum EC Standard for the Non-irrigation Season (November through March)

The Board is proposing to adopt a maximum standard for EC that is applicable when irrigation is not a concern. During the time period extending from November 1 through March 31, an EC value of 2000 µS/cm is being proposed to protect riparian vegetation throughout the affected watersheds. An EC value of 2000 µS/cm is being proposed because it reflects the natural water quality in the Powder River and Little Powder River, which have healthy riparian vegetation even though they have recorded mean values of EC that range between 1800 and 2000. Given that natural levels of EC at 2000 µS/cm maintain healthy riparian vegetation, an EC standard of 2000 during non-irrigation season will protect plant growth in the riparian zone.

Rationale for the SAR Standards

The Board is proposing standards for SAR, because a high SAR value in irrigation water has the potential to impair soil structure and, consequently, impair or restrict the permeability of the soil.

Given that the harmful effects of a high SAR value decrease as the salinity of the water increases, the Board is proposing to adopt a SAR standard that will be derived by a formula. The formula proposed for adoption is expressed as SAR = (EC x 0.0071) - 2.475. Using this formula, the value of EC in the streams and rivers will determine the numeric standard for SAR. However, the SAR value derived from the formula cannot be used when the in-stream values for EC are extremely low or high.

At an EC of 350 μS/cm or less, the formula would dictate that the standard for SAR is less than zero. Given this nonsensical result, the formula does not apply when the EC is less than 350 μS/cm. Instead, when EC is at 350 μS/cm or less, the proposed standard for SAR is 0.5. See New Rule I (7).

At an EC value above 1000 μS/cm, a maximum SAR standard of 5 is being proposed. See New Rule I (7). A maximum standard of 5 for SAR is necessary for the following reason. If the soil water has an EC of 1000 μS/cm and an SAR value of 5, leaching as a result of rainfall can cause SAR problems in the surface soil. Impacts to the soil structure may occur because dilution from precipitation will cause the EC to decrease at a faster rate than the SAR thereby increasing the likelihood of a reduction in infiltration in the soils.

Although the Board is proposing to adopt the specific numeric standards for EC and SAR discussed above, the Board is also inviting the public to comment on the range of values and any alternative SAR formula, as indicated by the brackets within the text of new Rule I. The Board will consider all comments and suggestions as to why different EC and SAR values should be adopted as the applicable water quality standards during this rulemaking.

Why a New Classification is Necessary.

The Board is proposing the adoption of New Rules II and III in order to create a new water-use classification and standards for CBM produced water that is held in constructed ponds and reservoirs that are not located in natural drainage-ways or channels. The adoption of New Rules II and III is necessary because under Montana's existing classification system, all ponds and reservoirs within the Powder River drainage and Tongue River drainage are classified as suitable for fish and aquatic life and agricultural purposes. Since CBM produced water held in ponds and reservoirs will not be suitable for fish and only marginally suitable for aquatic life and agricultural use, the Board is proposing a new

classification in Rule II for CBM produced waters. Under Rule III, the designated uses of CBM produced water held in ponds and reservoirs will be limited to watering livestock and wildlife, secondary contact recreation (such as boating or wading) and will be designated marginally suitable for aquatic life (not including fish) and for agricultural use.

If the Board does not establish a new classification for ponds and reservoirs containing CBM produced water, CBM ponds and reservoirs would be classified as B-2, B-3, or C-3 under the existing classification system. As such, CBM ponds and reservoirs would be required to meet water quality standards that fully protect fish and agricultural uses. However, CBM produced water in its natural state will not meet the water quality standards necessary to protect fish and fully support agricultural uses.

Specifically, CBM produced water often has elevated levels of parameters that are harmful to fish, such as ammonia and dissolved oxygen. Therefore, it is likely that CBM produced water will not meet the standards of C-3 waters that are protective of fish. In addition, some of the CBM ponds will be physically unsuitable for fish growth and propagation. For example, some of the ponds will be too shallow to support fish and some of them may go dry. In some of the ponds, evaporation will cause concentrations of certain parameters to the point that they will violate the water quality standards that apply to C-3 waters. Finally, the narrative standard preventing concentrations of substances that would harm agricultural use (e.g., SAR) would be violated in most cases.

The proposed new classification and standards in Rules II and III recognize that the primary beneficial use of CBM ponds and reservoirs is for livestock and wildlife watering and establishes standards to protect those uses.

Why a Modification to the Nondegradation Rule is Necessary.

The Board is proposing to amend ARM 17.30.715 to specify that the nonsignificance criteria for EC and SAR will be determined under the criteria used for parameters that have only narrative water quality standards. The proposed amendment is necessary due to the Board's proposal to adopt numeric water quality standards for the parameters EC and SAR.

Under current rules, EC and SAR are regulated under the narrative water quality standard that prohibits substances in water in concentrations that are "harmful" to human health, aquatic life, and plant life. ARM 17.30.637(1)(d). As such, nonsignificant changes in water quality resulting from discharges of EC and SAR are determined under a rule implementing Montana's nondegradation policy that applies only to parameters with narrative water quality standards. See ARM 17.30.715(1)(g). Under this rule, changes in water quality for parameters for which there are only narrative standards are considered nonsignificant, " ... .if the changes will not have a measurable effect on any existing or anticipated use or cause measurable changes in aquatic life or ecological

integrity." (emphasis added). Upon adoption of numeric standards for EC and SAR the nonsignificance criteria for parameters with only narrative standards will no longer apply. Accordingly, the Board must amend the rules to specifically provide that the nonsignificance criteria currently applicable to only narrative standards will also apply to EC and SAR.

Alternatively, the Board could adopt nonsignificance criteria for EC and SAR by either defining those parameters as "harmful," in which case the nonsignificance criteria allowing changes up to 50% of the standard under ARM 17.30.715(1)(f) would apply, or the Board could adopt a new nonsignificance threshold, such as allowing 10% of the remaining assimilative capacity. The Board is rejecting both of these alternatives for the reasons given below.

Recorded data from the U.S.G.S. and Department files indicates that both EC and SAR fluctuate naturally in the Tongue River and Powder Rivers to the extent that the proposed numeric standards in New Rule I will often be exceeded. Since the policy of "maintaining" existing "high quality" water will not prevent EC and SAR from naturally degrading to the point that standards are exceeded, the alternative of adopting rules that allow only de minimis changes in water quality is neither justified nor practical. Regardless of the treatment used by a particular discharger to prevent changes in water quality that will exceed a de minimis threshold, the Tongue River and Powder River will naturally and unpredictably exceed any such criteria throughout the year. Furthermore, a de minimis requirement, such as 10% of the assimilative capacity, would be virtually impossible to comply with or enforce. Slight changes in EC or SAR are extremely difficult to measure. A de minimis threshold based on a percentage of the assimilative capacity would require virtually continuous monitoring of SAR and EC levels in the receiving water. Moreover, since the waters at issue are often not "high quality" and will naturally exceed significance thresholds up to the point where the new standards are exceeded, the alternative of allowing only de minimis changes in water quality is not warranted.

Given the natural fluctuations of EC and SAR in the Tongue and Powder Rivers, the Board believes that retaining the current nonsignificance criteria applicable only to parameters with narrative standards is justified. By adopting the proposed numeric standards, the Department will be able to ensure that agricultural uses are fully protected by imposing these new standards in MPDES permits. By amending the rules to specify that the nonsignificance threshold for narrative standards will apply to EC and SAR, the Board will be adopting a threshold that, similar to the proposed standards, will protect existing agricultural uses by prohibiting any "measurable effect" on those uses.

4. Concerned persons may submit their data, views or arguments, either orally or in writing, at the hearing. Written data, views or arguments may also be submitted to the Board of Environmental Review, P.O. Box 200901, Helena,

Montana, 59620-0901, faxed to (406) 444-4386 or emailed to the Board Secretary at ber@state.mt.us and must be received no later than 5:00 p.m., _____, 2002. To be guaranteed consideration, the comments must be postmarked on or before that date.

5. _____, attorney for the Board, has been designated to preside over and conduct the hearing.

6. The Board maintains a list of interested persons who wish to receive notices of rulemaking actions proposed by this agency. Persons who wish to have their name added to the list shall make a written request that includes the name and mailing address of the person to receive notices and specifies that the person wishes to receive notices regarding: air quality; hazardous waste/waste oil; asbestos control; water/wastewater treatment plant operator certification; solid waste; junk vehicles; infectious waste; public water supplies; public sewage systems regulation; hard rock (metal) mine reclamation; major facility siting; opencut mine reclamation; strip mine reclamation; subdivisions; renewable energy grants/loans; wastewater treatment or safe drinking water revolving grants and loans; water quality; CECRA, underground/above ground storage tanks; MEPA; or general procedural rules other than MEPA. Such written request may be mailed or delivered to the Board of Environmental Review, 1520 E. Sixth Ave., P.O. Box 200901, Helena, Montana 59620-0901, faxed to the office at (406) 444-4386, emailed to the Board Secretary at ber@state.mt.us or may be made by completing a request form at any rules hearing held by the Board.

7. The bill sponsor notice requirements of 2-4-302, MCA, do not apply.

BOARD OF ENVIRONMENTAL REVIEW

By: _____
JOSEPH W. RUSSELL, M.P.H.
Chairman

Reviewed by:

_____
JOHN F. NORTH, Rule Reviewer

Certified to the Secretary of State, _____, 2002.